

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Abraham Pinter  
Serial No. :  
Filed : HEREWITH  
Title : HIV-1 GP120 V1/V2 DOMAIN EPITOPES CAPABLE OF GENERATING  
NEUTRALIZING ANTIBODIES

Art Unit :  
Examiner :

Commissioner for Patents  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows:

In the specification:

On page 1, before "Background of the Invention" insert the following new paragraph:

--Related Application Information

This application is a continuation of application serial number 09/508,208, filed March 8, 2000, which is a 371 of PCT/US98/18679, filed September 8, 1998.--

In the claims:

Claims 1-32 are pending in this application and are reiterated below.

1. (Reiterated) A protein comprising a gp120 V1/V2 domain of an HIV-1 strain and not comprising the gp120 V3 domain of an HIV-1 strain, wherein said protein does not substantially bind CD4, said gp120 V1/V2 domain of said protein displaying an epitope which is recognized

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by an antibody which neutralized at least one HIV-1 primary isolate with a ND<sub>90</sub> of less than 100 µg/ml.

2. (Reiterated) The protein of claim 1, wherein said V1/V2 domain epitope is recognized by an antibody which neutralizes at least one HIV-1 primary isolate from each of at least two different clades with a ND<sub>90</sub> of less than 100 µg/ml.

3. (Reiterated) The protein of claim 1, wherein said two different clades are selected from the group consisting of clade A, clade B, clade C, clade D, and clade E.

4. (Reiterated) The protein of claim 1, wherein said V1/V2 domain epitope is recognized by an antibody which neutralizes at least two HIV-1 primary isolates of the same clade with a ND<sub>90</sub> of less than 100 µg/ml.

5. (Reiterated) The protein of claim 3, wherein said V1/V2 domain epitope is recognized by an antibody which neutralizes at least one HIV-1 primary isolate of at least three different clades selected from the group consisting of clade A, clade B, clade C, clade D, and clade E, with a ND<sub>90</sub> of less than 100 µg/ml.

6. (Reiterated) The protein of claim 1 wherein said ND<sub>90</sub> is less than 50 µg/ml.

7. (Reiterated) The protein of claim 1 wherein said ND<sub>90</sub> is less than 20 µg/ml.

8. (Reiterated) The protein of claim 1 wherein said ND<sub>90</sub> is less than 10 µg/ml.

9. (Reiterated) The protein of claim 1 wherein said ND<sub>90</sub> is less than 5 µg/ml.

10. (Reiterated) The protein of claim 1 wherein said ND<sub>90</sub> is less than 1 µg/ml.

11. (Reiterated) The protein of claim 1 wherein said V1/V2 domain comprises a region that is at least 50% identical to GEIKNCSFNITTSIRDKVQKEYALFYKLDIVPID.

12. (Reiterated) The protein of claim 1 wherein said V1/V2 domain comprises a region that is at least 75% identical to GEIKNCSFNITTSIRDKVQKEYALFYKLDIVPID.

13. (Reiterated) The protein of claim 1 wherein said V1/V2 domain comprises a region that is at least 90% identical to GEIKNCSFNITTSIRDKVQKEYALFYKLDIVPID.

14. (Reiterated) The protein of claim 1 wherein said V1/V2 domain is at least 50% identical to  
VKLTPLCVTLNCIDLRNATNATSNSNTTNTTSSSGGLMMEQGEIKNCSFNITTSIRDKV1K  
EYALFYKLDIVPIDNPKNSTNYRLISCNTSVITQA (SEQ ID NO:1).

15. (Reiterated) The protein of claim 1 wherein said V1/V2 domain is at least 50% identical to  
VKLTPLCVTLNCIDLRNATNATSNSNTTNTTSSSGGLMMEQGEIKNCSFNITTSIRDKV1K  
EYALFYKLDIVPIDNPKNSTNYRLISCNTSVITQA (SEQ ID NO:1) and not comprising the  
gp120 V3 domain of an HIV-1 strain, wherein said protein does not substantially bind CD4, said  
gp120 V1/V2 domain related region displaying an epitope which is recognized by an antibody  
which neutralizes at least one HIV-1 primary isolate with s ND<sub>90</sub> of less than 100 µg/ml.

16. (Reiterated) The protein of claim 1 wherein said V1/V2 domain is at least 90% identical to  
VKLTPLCVTLNCIDLRNATNATSNSNTTNTTSSSGGLMMEQGEIKNCSFNITTSIRDKV1K  
EYALFYKLDIVPIDNPKNSTNYRLISCNTSVITQA (SEQ ID NO:1).

17. (Reiterated) The protein of claim 1, wherein said protein is a glycoprotein.

18. (Reiterated) A protein comprising a gp120 V1/V2 domain of an HIV-1 strain and not comprising a gp120 V3 domain of an HIV-1 strain, wherein said protein does not substantially bind CD4, said protein, when used to immunize a rat, being capable of eliciting an antibody which neutralizes at least one clade B HIV-1 primary isolate and at least one clade D HIV-1 primary isolate with a ND<sub>90</sub> of less than 100 µg/ml.

19. (Reiterated) Monoclonal antibody which binds the gp120 V1/V2 domain of HIV-1 strain Case-A2 and neutralizes at least one clade B HIV-1 primary isolate and at least one clade D HIV-1 primary isolate with a ND<sub>90</sub> of less than 100 µg/ml.

20. (Reiterated) The monoclonal antibody of claim 19 wherein said antibody neutralizes at least one clade A HIV-1 primary isolate with a ND<sub>90</sub> of less than 100 µg/ml.

21. (Reiterated) A method for stimulating the formation of antibodies capable of neutralizing infection by an HIV viral isolate in at least one mammalian species, which comprises immunizing a mammalian subject with a composition comprising the protein of claim 1.

22. (Reiterated) The method of claim 21 wherein said composition is suspended in a pharmaceutical carrier or vehicle.

23. (Reiterated) The method of claim 21 wherein said composition comprises an adjuvant.

24. (Reiterated) The method of claim 23 wherein said adjuvant is an aluminum salt.

25. (Reiterated) The method of claim 23 wherein said adjuvant is an oil-in-water emulsion comprising a emulsifying agent and a metabolizable oil.

26. (Reiterated) The method of claim 21 wherein said composition is administered to said mammalian subject by injection.

27. (Reiterated) An nucleic acid molecule encoding the protein of claim 1.

28. (Reiterated) An expression vector comprising the nucleic acid molecule of claim 27.

29. (Reiterated) A host cell harboring the vector of claim 28.

30. (Reiterated) A hybrid protein comprising a first part and a second part, said first part comprising the protein of claim 1, said second part comprising an amino terminal carrier protein comprising all or a portion of Friend MuLV gp70.

31. (Reiterated) The protein of claim 30 wherein said portion of gp170 comprises amino acids 1-33 of gp70.

32. (Reiterated) A protein comprising a first portion and a second portion, said first portion being a V1/V2 domain region homologous to PCVKLTPCV, said second portion being a V1/V2 domain region homologous to SCNTSVITQACP, said first and second portions being linked by at least on disulfide bond.

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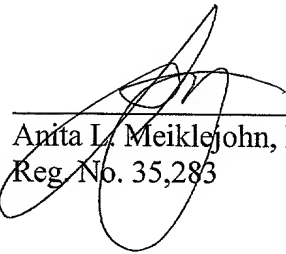
REMARKS

This amendment is being filed together with a continuation application. No new matter is introduced.

Applicant asks that all claims be examined. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 2 JAN 2002

  
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Anita L. Meiklejohn, Ph.D.  
Reg. No. 35,283

Fish & Richardson P.C.  
225 Franklin Street  
Boston, Massachusetts 02110-2804  
Telephone: (617) 542-5070  
Facsimile: (617) 542-8906

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